
J-Drive MK3

Clean boost / overdrive guitar effect pedal

User Manual
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INTRODUCTION

Thanks for purchasing a Diamond J-Drive MK3 combination clean boost / overdrive. The MK3 evolution of the J-Drive family incorporates the liquid drive of the limited edition J-Drive TR with the transparency of a new low noise JFET / BJT clean boost.

Remember to protect your hearing and wear appropriate hearing protection when playing loud...

DESIGN BACKGROUND

The original concept of the J-Drive began as the happy marriage of an overdrive with a separately switchable clean boost - a clean boost that could be used either on its own or as a means to 'overdrive the overdrive' as a solo boost. The limited edition J-Drive TR expanded on this idea by adding the ability to transform the clean boost circuit into a higher gain 'treble boost'. Unfortunately, the availability of NOS 2N388 JAN mil spec germanium transistors and careful gain selection for those transistors limited the TR's long term production. The TR did introduce a new, more liquid drive section that we really liked - and one that was not reliant on limited availability components. The MK3 has been designed to incorporate that same TR overdrive circuit, including Schottky diode clipping, bright shelf EQ and transformer output smoothing, along with a new two-transistor clean boost section that incorporates concepts from both the original J-Drive and the TR.



FEATURES

- independently switchable clean/treble boost and overdrive, each true bypass
- new discrete clean boost circuit with JFET input buffering and bipolar drive
- post-volume control overdrive transformer output stage that smooths upper mids and highs
- premium audio components, including 2% polypropylene capacitors, 1% metal film resistors, Vishay transistors, and a Burr Brown OPA2134 opamp
- 'Close Asymmetry' Schottky diode clipping circuit
- warmth control – replaces the traditional fixed frequency cut/boost circuit with a variable high-frequency cutoff filter coupled with variable low-frequency gain.
- switchable highpass shelf filter for additional 'bite', implemented without additional active components
- battery or standard negative tip regulated 9V DC adapter operation
- genuine Hammond cast aluminum 4.7 x 3.7 x 1.1 inch case

CONTROLS

The J-Drive MK3 is a combination of two pedals in one - a clean boost and an overdrive - that can be independently true-bypass switched. The clean boost is first in the chain (input comes in from the right), and can also be used to ‘overdrive the overdrive’. Controls are grouped using lines on the MK3 case to show which control belongs to which effect - *DRIVE*, *WARMTH* and *VOLUME* affect only the overdrive, while *GAIN* affects only the clean boost.

DRIVE

This controls the basic overdrive level. Backing it off gives a mild and controlled overdrive sound, while opening it up gives more of a straight ahead distortion. Pickup output levels will also impact the drive level – humbuckers generally will more easily push the drive and your amp into distortion.

WARMTH

The tone control in the J-Drive MK3 overdrive section is not a typical fixed frequency cut/boost circuit. The warmth circuit acts as a low-pass filter coupled with gain boost as the cut off frequency drops. This certainly adds a different flavor to the feel of the overdrive than traditional overdrive tone circuits. Moving the dial clockwise moves the filter cutoff point lower, darkening the signal, but at the same time increasing gain, potentially adding more harmonics depending on the signal and level.

VOLUME

This adjusts the overall output level of the overdrive section.

GAIN

This sets the output level of the clean boost circuit. As the boost circuit precedes the overdrive circuit, the boost can be set to further overdrive the overdrive. Gain ranges from about -6 dB (about half the input signal level) in the counterclockwise position to approximately 13 dB of gain (about 4.5 times the input signal level) in the fully clockwise position. At the noon position on the dial, the clean boost provides about 8 dB of gain (about 2.5 times the input signal level).

There are many different interesting combinations of drive, clean boost gain and warmth settings – take time to experiment with the many tonal possibilities of the MK3.

SWITCHES

DRIVE

This switches the overdrive circuit between bypass and in-circuit operation, with a red LED indicating that the overdrive is on.

BOOST

This switches the clean boost circuit between bypass and in-circuit operation, with a green LED indicating that the boost is on.

BRT

This switches the ‘bright’ high shelf filter in and out of operation, with down (towards ‘BRT’) being the ‘on’ position for the switch. Use this to brighten up humbuckers, or just for that bit of extra bite.

POWERING

BATTERY

The MK3 comes standard with a 9V battery, and with its approximate 12 mA of current draw, can operate for 30 hours or more from a standard alkaline cell.

Changing the 9V battery first requires the removal of the four back corner screws of the pedal. The battery clip is attached to the inside of the back plate – gently pull the back plate off so as not to strain the connecting wires between the battery clip and the main circuit board. After replacing the battery, carefully place any slack in the connecting wires into the box cavity, and replace the back plate with the four screws, taking care not to pinch the connecting wires.

Note: the LED’s are not accurate indicators of battery strength, so if the battery has not been changed for a while and the clean boost or overdrive either sounds ‘different’ or doesn’t work at all, try swapping out for a new battery.

9V ADAPTER

Any standard regulated 9V DC negative pin AC adapter for effect pedals can be used to power the J-Drive MK3. The insertion of the AC adapter plug automatically removes the internal battery from the circuit, but if you’re planning to permanently power using an external adapter, it is recommended that the battery be removed.

PRESETS

The MK3’s combination of gain and tonal controls gives many tonal possibilities. As a starting point, here are a few of our favorite presets:

LIGHT DRIVE

Drive: 7 o’clock

Warmth: 10 o’clock

Volume: 1:30 o’clock

BRT: ON

Gain (optional, provides an interesting tonality change): noon

CRUNCHY ON THE OUTSIDE, SMOOTH ON THE INSIDE

Drive: 2 o’clock

Warmth: 1 o’clock

Volume: 12:30 o’clock

BRT: OFF